UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,096	09/28/2000	Hsin-Chu Tsai	042390.P8829	9115

7590 02/20/2004

Mark L. Watson
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER	
MONESTIME, MACKLY	
ART UNIT	**PAPER NUMBER**
2676	15

DATE MAILED: 02/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/675,096	TSAI ET AL.	
	Examiner	Art Unit	
	Mackly Monestime	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment

1. The amendment received on December 12, 2003, has entered and carefully considered. Claims 1-24 are still pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-4, 6-8, 11-12, 14-16 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Desormeaux (US Patent No. 6,094,203).

4. As per claims 1-2, 11 and 20-21, Desormeaux disclosed the invention as claimed, including a computer system comprising: a central processor unit to execute non-graphics

instructions (Fig. 1, Item No. 1006) a graphics core to compute graphical transformations via supersampling techniques (Fig. 1, Item No. 1002); and a unified graphics cache coupled to the graphics core (Fig. 1, Item No. 1004). Desormeaux did not explicitly disclose that the unified graphics cache store supersampling image. However, Desormeaux did disclose the steps of processing a data set representing a three dimensional volume by assigning a color and a opacity to each volume element, and projecting them onto an image plane; therefore, Desormeaux inherently disclosed the step of storing supersampling image.

5. As per claims 3 and 22, Desormeaux disclosed a central processing unit and a CPU cache coupled to the CPU core (Fig. 1, Items No. 1006, 1008).

6. As per claims 4 and 23, Desormeaux disclosed a bus interface coupled to the CPU cache and the graphics cache (Fig. 1, Item No. 1004, 1008).

7. As per claim 6, Desormeaux disclosed a main memory coupled to the bus interface (Fig. 1, Item No. 1012).

8. As per claims 7-8, 12, 14 and 15-16, Wilde disclosed that the graphics core amplifies polygons and renders the polygons into the graphics cache; and image polygons are implemented via viewport transformation (col. 1, lines 25-64; col. 3, lines 39-47).

Claim Rejections - 35 U.S.C. § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 5, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desormeaux in view of Wilde (US Patent No. 5,828,382).

11. Wilde was cited in the last office action.

12. As per claims 5, 19 and 24, Desormeaux did not explicitly disclose that the graphics core operates according to a tile based rendering architecture. However, the concepts and associated advantages of using a tile based rendering architecture are well known in the art. It can be evidenced in the reference by Wilde in which a tile based rendering technique is used (col. 3, lines 11-26). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have utilized the tile based rendering architecture taught by Wilde into the system of Desormeaux because doing so would provide greater design flexibility and efficiency by allowing different memory arrangement in a tile oriented operation, thereby enhance the processing speed of the graphics system.

Claims 9, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desormeaux in view of Pfister et al (US Patent No. 6,448,968).

13. Pfister et al was cited in the last office action.

14. As per claims 9, 13 and 17, Desormeaux did not disclose that the graphics core downsampling the image polygons after the polygons have been rendered. However, Pfister et al

disclosed the use of a downsampling technique (col. 12, lines 2-10). Moreover, numerous downsampling methods are well known in the graphics art; for instance downsampling often refers to a sampling of the image data by a factor of two in both the horizontal and vertical directions. In addition, the downsampled pixel value of a block of pixels in an image may be the medium value of all pixels in that block, wherein the block size is four pixels, which is typical, the values of the pixels in the block may be added together and divided by four. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have utilized the downsampling technique taught by Pfister et al into the system of Desormeaux because doing so would enhance the quality of the resulting image.

15. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Desormeaux view of Pfister et al as applied to claims 1-9 and 11-17 above, and further in view of Li et al (US Patent No. 5,860,060).

16. Li et al was cited in the last office action.

17. As per claims 10 and 18, the combination did not disclose the downsampling of the image polygons are implemented by executing a bit aligned block transfer. However, the use of a bit aligned block transfer is well known in the graphics art. It can be evidenced in the reference by Li et al in which a bit blt hardware accelerator is used (col. 7, lines 19-20). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the cited references because doing so would provide high quality "antialiased" text and graphics without requiring the calculation of colors by the host processor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mackly Monestime whose telephone number is (703) 305-3855. The examiner can normally be reached on Monday to Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached on (703) 308-6829.

Any response to this action should be mailed to:

Commissioner of Patent and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, Va, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Matthew C. Bella

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Mackly Monestime
Patent Examiner

February 11, 2004